AVIATION

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A DeHavilland 50 Cabin Plane on Pontoons.

VOLUME XX

NUMBER 24

SPECIAL FEATURES

THE AIR COMMERCE ACT OF 1926
MORE ARCTIC FLIGHT PHOTOGRAPHS
CORRUGATED METAL SHEET IN AIRCRAFT CONSTRUCTION

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Selling the Air Mail

THE SUCCESS or failure of the privately operated air mail lines which are starting up throughout the country depends primarily on the question of whether they get a sufficient amount of revenue to meet normal operating expenses Regularity and economy is extremely important and depends on the management of the lines almost as much as it does on the equipment used but, even if a line were perfectly managed and had the best of equipment and pilots, it could not survive if it did not have the revenue Where the management or equipment is bad but the line shows that it is getting enough revenue to meet the normal expenses which are indicated by the operations of other lines, it is always possible to get new management, better equipment and sufficient working capital The question of revenue is paramount but because the operation of the planes is more interesting and romantic it has absorbed the attention of the organizers of the new air lines and they have not concentrated on the main problem—getting the revenue

It is hard for the airminded individual, who absorbs with eager interest every bit of aeronautical news, to realize how ignorant and indifferent the general public is to the existence of the air mail The average business man or, more important still, his stenographer, has a hazy idea that there is an air mail service but rarely knows anything definite about the matter and does not realize how valuable the air mail might be to his particular requirements, and, therefore, does not bother to find out what it is all about The value of the air mail must be drummed into the American public through a steady campaign of publicity and advertising Air mail is a commodity like any other and it must be sold to the business man and, thereafter, constantly kept before his attention

If the air lines are to succeed they must realize that the sales cost is a part of their operating expenses and is just as vital to the existence of their organizations as is the gasoline which goes into the engines of their planes They must further realize that the effort must be national, for example, the Salt Lake-Los Angeles line will get much of its business from New York and visa versa Normal sales methods of free publicity, advertising and circularization can be used but they all cost money and each air line must bear its proportional share of expense Air lines can do a lot through local Chambers of Commerce and other civic and business organizations but the great task of selling the air mail to the American public can only be done through a great and continued nationwide effort

Such an effort can only be accomplished through the cooperation of all the privately owned air lines Each line striving individually will work up a certain amount of business for itself locally, but as much of its business must come from far away points it can be entirely successful only by educating the whole country to the value of the air mail and the ways to use it Last fall some of the private operators got together and held a meeting for the purpose of outlining methods of getting business Many of the future mail lines were not represented and very little was accomplished but by next fall the operators will have begun to realize the necessity of closer cooperation and a meeting would probably accomplish certain very definite results In the meantime it is up to every one interested in aviation to follow the lead of the Chamber of Commerce, the N A A and many of the flying clubs and to boost the use of the air mail in every way possible

Airplane and Automobile Cooperation

THE CLOSELY allied connection which exists between certain sections of engineering art is perhaps in no other case so clearly apparent as it is between the automobile and the aeronautical fields, particularly in respect to the airplane While there are certain specific requirements of paramount importance in each and every field, the very considerable overlapping, which must of necessity exist in aeronautical and automobile engineering has undoubtedly been very largely responsible for the comparatively rapid and even, at times, phenominal development that has taken place during the past twenty years in aeronautics

There was a time, in the early days of flying, when the debt which the airplane held to the automobile was supreme since, without the gasoline engine, which was primarily produced for road transportation, the airplane would have been impossible That aeronautics is, however, amply paying back this debt is clear when the remarkable developments that have been made in airplane engines are considered,—developments which cannot but have a very vital effect upon the reliability, economy and general success of the automobile

That an even closer cooperation may soon exist between automobile and aeronautical engineers was a thought indirectly expressed by J T Little, Jr., president of the Society of Automotive Engineers, at the Summer meeting of this body held at French Lick Springs, Ind., during the week of May 31 In the opinion of Mr Little, automobiles must become smaller and lighter The problems of the aeronautical engineer have ever been mainly concerned with the question of weight and it would seem highly probable that much of the development work which has been carried out in this direction, not only in the case of engine design but also concerning the design of light rigid structures, capable of withstanding heavy loads, will prove of value to automobile designers

This is in reality an extremely interesting outlook because, with a great host of automobile engineers bending their energies in the direction of obtaining lighter metal structures, involving the probable extensive use of aluminum and duralumin, in automobiles, aeronautical design cannot but benefit from the added concentration on a common subject of such importance

The "Air Commerce Act of 1926"

Civil Aviation Bill is Now a Law and Should be Studied by all Affected Thereby.

THE CIVIL aviation bill, the full text of which is given below, should be read with the greatest care by all concerned with civil aviation. On its correct administration depends the progress of civilian aviation in this country and it is up to YOU to become familiar with the provisions of the law. The law is very general and elastic in its terms and leaves all the administration up to the Secretary of Commerce and his new Assistant Secretary. What is meant by many of the clauses will be established by practice and probably some of the interpretations and practices will be contested and the contest will go to the law courts.

Very briefly the law provides various provisions for the furthering of air navigation facilities and for the establishment of regulations governing air traffic. The registration of planes, certificates of airworthiness and pilots' licenses are made necessary for all planes used in a business way and flying from one state to another. Flying within one state or flying between states by planes which are not in any way to be used for business purposes is not regulated and registration or the obtaining of licenses is optional. Funds for the carrying out of the law and for the development of air navigation facilities will have to be voted by Congress.

In reading the law it will be well to refer back to the first section, after section II or the penalty clauses have been read, as this will give a much clearer picture of what the law intends.

The Act

The full text of the Air Commerce Act is reprinted herewith:

An Act To encourage and regulate the use of aircraft in commerce, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That as used in this Act, the term "air commerce" means transportation in whole or in part by aircraft of persons or property for hire, navigation of aircraft in furtherance of a business, or navigation of aircraft from one place to another for operation in the conduct of a business. As used in this Act, the term "interstate or foreign air commerce" means air commerce between any State, Territory, or possession, or the District of Columbia, and any place outside thereof; or between points within the same State, Territory, or possession, or the District of Columbia, but through the airspace over any place outside thereof; or wholly within the airspace over any Territory or possession or the District of Columbia

SEC 2 PROMOTION OF AIR COMMERCE.—It shall be the duty of the Secretary of Commerce to foster air commerce in accordance with the provisions of this Act, and for such purposes—

(a) To encourage the establishment of airports, civil airways, and other air navigation facilities

(b) To make recommendations to the Secretary of Agriculture as to necessary meteorological service

(c) To study the possibilities for the development of air commerce and the aeronautical industry and trade in the United States and to collect and disseminate information relative thereto and also as regards the existing state of the art

(d) To advise with the Bureau of Standards and other agencies in the executive branch of the Government in carrying forward such research and development work as tends to create improved air navigation facilities The Secretary of Commerce is authorized to transfer funds available for carrying out the purposes of this subdivision to any such agency for carrying forward such research and development work in cooperation with the Department of Commerce

(e) To investigate, record, and make public the causes of accidents in civil air navigation in the United States

(f) To exchange with foreign governments through existing governmental channels information pertaining to civil air navigation.

SEC. 3. REGULATORY POWERS.—The Secretary of Commerce shall by regulation—

(a) Provide for the granting of registration to aircraft eligible for registration, if the owner requests such registration No aircraft shall be eligible for registration (1) unless it is a civil aircraft owned by a citizen of the United States and not registered under the laws of any foreign country, or (2) unless it is a public aircraft of the Federal Government, or of a State, Territory, or possession, or of a political subdivision thereof All aircraft registered under this subdivision shall be known as aircraft of the United States

(b) Provide for the rating of aircraft of the United States as to their airworthiness. As a basis for rating, the Secretary of Commerce (1) may require, before the granting of registration for any aircraft first applying therefor more than eight months after the passage of this Act, full particulars of the design and of the calculations upon which the design is based and of the materials and methods used in the construction, and (2) may in his discretion accept in whole or in part the reports of properly qualified persons employed by the manufacturers or owners of aircraft; and (3) may require the periodic examination of aircraft in service and reports upon such examination by officers or employees of the Department of Commerce or by properly qualified private persons. The Secretary may accept any such examination and report by such qualified persons in lieu of examination by the employees of the Department of Commerce. The qualifications of any person for the purposes of this section shall be demonstrated in a manner specified by and satisfactory to the Secretary. The Secretary may, from time to time, re-rate aircraft as to their airworthiness upon the basis of information obtained under this subdivision.

(c) Provide for the periodic examination and rating of airmen serving in connection with aircraft of the United States as to their qualifications for such service.

(d) Provide for the examination and rating of air navigation facilities available for the use of aircraft of the United States as to their suitability for such use

(e) Establish air traffic rules for the navigation, protection, and identification of aircraft, including rules as to safe altitudes of flight and rules for the prevention of collisions between vessels and aircraft

Licenses and Certificates

(f) Provide for the issuance and expiration, and for the suspension and revocation, of registration, aircraft, and airman certificates, and such other certificates as the Secretary of Commerce deems necessary in administering the functions vested in him under this Act. Within 20 days after notice that application for any certificate is denied or that a certificate is suspended or revoked, the applicant or holder may file a written request with the Secretary of Commerce for a public hearing thereon The Secretary upon receipt of the request shall forthwith (1) arrange for a public hearing to be held within 20 days after such receipt in such place as the Secretary deems most practicable and convenient in view of the place of residence of the applicant or holder and the place where evidence bearing on the cause for the denial, suspension, or revocation is most readily obtainable, and (2) give the applicant or holder at least ten days' notice of the hearing, unless an earlier hearing is consented to by him Notice under this subdivision may be served personally upon the applicant or holder or sent him by registered mail The Secretary, or any officer or employee of the Department of Commerce designated by him in writing for the purpose, may hold any such hearing and for the purposes thereof administer oaths, examine witnesses, and issue subpoenas for the attendance and testimony of witnesses, or the production of books, papers, documents, and other evidence, or the taking of depositions before any designated individual competent to administer oaths. Witnesses summoned or whose depositions are taken shall receive the same fees and mileage as witnesses in courts of the United States. All evidence taken at the hearing shall be recorded and forwarded to the Secretary for decision in the matter to be rendered not later than ten days

after the completion of the hearing The decision of the Secretary, if in accordance with law, shall be final The denial, suspension, or revocation shall be invalid unless opportunity for hearing is afforded, notice served or sent, and decision rendered within the respective times prescribed by this subdivision.

SEC. 4. AIRSPACE RESERVATIONS.—The President is authorized to provide by Executive order for the setting apart and the protection of airspace reservations in the United States for national defense or other governmental purposes and, in addition, in the District of Columbia for public safety purposes. The several States may set apart and provide for the protection of necessary airspace reservations in addition to and not in conflict either with airspace reservations established by the President under this section or with any civil or military airway designated under the provisions of this Act.

Official Aids

SEC 5 AIDS TO AIR NAVIGATION.—(a) Whenever at any time the Postmaster General and the Secretary of Commerce by joint order so direct, the airways under the jurisdiction and control of the Postmaster General, together with all emergency landing field and other air navigation facilities (except airports and terminal landing fields) used in connection therewith, shall be transferred to the jurisdiction and control of the Secretary of Commerce, and the established airports and terminal landing fields may be transferred to the jurisdiction and control of the municipalities concerned under arrangements subject to approval by the President. All unexpended balances of appropriations which are available for and which have been allotted for expenditure upon such airways, emergency landing fields, and other air navigation facilities, except airports and terminal landing fields, shall thereupon be available for expenditure under the direction of the Secretary of Commerce, in lieu of the Postmaster General, for the purposes for which such appropriations were made. No part of such unexpended balances of appropriations shall be used for the purchase or establishment of airports or terminal landing fields.

(b) The Secretary of Commerce is authorized to designate and establish civil airways and, within the limits of available appropriations hereafter made by the Congress, (1) to establish, operate, and maintain along such airways all necessary air navigation facilities except airports; and (2) to chart such airways and arrange for publication of maps of such airways, utilizing the facilities and assistance of existing agencies of the Government so far as practicable. The Secretary of Commerce shall grant no exclusive right for the use of any civil airway, airport, emergency landing field, or other air navigation facility under his jurisdiction

(c) Air navigation facilities owned or operated by the United States may be made available for public use under such conditions and to such extent as the head of the department or other independent establishment having jurisdiction thereof deems advisable and may by regulation prescribe.

(d) The head of any Government department or other independent establishment having jurisdiction over any airport or emergency landing field owned or operated by the United States may provide for the sale to any aircraft of fuel, oil, equipment, and supplies, and the furnishing to it of mechanical service, temporary shelter, and other assistance under such regulations as the head of the department or establishment may prescribe, but only if such action is by reason of an emergency necessary to the continuance of such aircraft on its course to the nearest airport operated by private enterprise. All such articles shall be sold and such assistance furnished at the fair market value prevailing locally as ascertained by the head of such department or establishment. All amounts received under this subdivision shall be covered into the Treasury, but that part of such amounts which, in the judgment of the head of the department or establishment, is equivalent to the cost of the fuel, oil, equipment, supplies, services, shelter, or other assistance so sold or furnished shall be credited to the appropriation from which such cost was paid, and the balance, if any, shall be credited to miscellaneous receipts.

(e) Section 3 of the Act entitled "An Act to increase the efficiency and reduce the expense of the Signal Corps of the Army, and to transfer the Weather Service to the Department of Agriculture," approved October 1, 1890, is amended by adding at the end thereof a new paragraph to read as follows

"Within the limits of the appropriations which may be made for such purpose, it shall be the duty of the Chief of the Weather Bureau, under the direction of the Secretary of Agriculture, (a) to furnish such weather reports, forecasts, warnings, and advices as may be required to promote the safety and efficiency of air navigation in the United States and above the high seas, particularly upon civil airways designated by the Secretary of Commerce under authority of law as routes suitable for air commerce, and (b) for such purposes to observe, measure, and investigate atmospheric phenomena, and establish meteorological offices and stations."

(f) Nothing in this Act shall be construed to prevent the Secretary of War from designating routes in the navigable airspace as military airways and prescribing rules and regulations for the use thereof on routes which do not conform to civil airways established hereunder, or to prevent the Secretary of Commerce from designating any military airway as a civil airway, and when so designated it shall thereupon become a civil airway within the meaning of this Act, and the Secretary of War is hereby authorized to continue the operation of air navigation facilities for any military airway so designated as a civil airway until such time as the Secretary of Commerce can provide for the operation of such facilities.

Status of Foreign Aircraft

SEC 6 FOREIGN AIRCRAFT.—(a) The Congress hereby declares that the Government of the United States has, to the exclusion of all foreign nations, complete sovereignty of the airspace over the lands and waters of the United States including the Canal Zone Aircraft a part of the armed forces of any foreign nation shall not be navigated in the United States including the Canal Zone, except in accordance with an authorization granted by the Secretary of State

(b) Foreign aircraft not a part of the armed forces of the foreign nation shall be navigated in the United States only if authorized as hereinafter in this section provided; and if so authorized, such aircraft and airmen serving in connection therewith, shall be subject to the requirements of section 3, unless exempt under subdivision (c) of this section.

(c) If a foreign nation grants a similar privilege in respect of aircraft of the United States and/or airmen serving in connection therewith, the Secretary of Commerce may authorize aircraft registered under the law of the foreign nation and not a part of the armed forces thereof to be navigated in the United States, and may by regulation exempt such aircraft, and/or airmen serving in connection therewith, from the requirements of section 3 other than the air traffic rules, but no foreign aircraft shall engage in interstate or intrastate air commerce

SEC 7 APPLICATION OF EXISTING LAWS RELATING TO FOREIGN COMMERCE.—(a) The navigation and shipping laws of the United States, including any definition of "vessel" or "vehicle" found therein and including the rules for the prevention of collisions, shall not be construed to apply to seaplanes or other aircraft or to the navigation of vessels in relation to seaplanes or other aircraft.

(b) The Secretary of the Treasury is authorized to (1) designate places in the United States as ports of entry for civil aircraft arriving in the United States from any place outside thereof and for merchandise carried on such aircraft, (2) detail to ports of entry for civil aircraft such officers and employees of the customs service as he may deem necessary, and to confer or impose upon any officer or employee of the United States stationed at any such port of entry (with the consent of the head of the Government department or other independent establishment under whose jurisdiction the officer or employee is serving) any of the powers, privileges or duties conferred or imposed upon officers or employees of the customs service and (3) by regulation to provide for the application to civil air navigation of the laws and regulations relating to the administration of the customs and public health laws to such extent and upon such conditions as he deems necessary

(c) The Secretary of Commerce is authorized by regulation to provide for the application to civil aircraft of the laws and regulations relating to the entry and clearance of vessels to such extent and upon such conditions as he deems necessary.

(d) The Secretary of Labor is authorized to (1) designate any of the ports of entry for civil aircraft as ports of entry for aliens arriving by aircraft, (2) detail to such ports of entry such officers and employees of the immigration service as he may deem necessary, and to confer or impose upon any employee of the United States stationed at such port of entry (with the consent of the head of the Government department or other independent establishment under whose jurisdiction the officer or employee is serving) any of the powers, privileges or duties conferred or imposed upon officers or employees of the immigration service, and (3) by regulation to provide for the application to civil air navigation of the laws and regulations relating to the administration of the immigration laws to such extent and upon such conditions as he deems necessary

SEC 8 ADDITIONAL ASSISTANT SECRETARY OF COMMERCE.—To aid the Secretary of Commerce in fostering air commerce and to perform such functions vested in the Secretary under this Act as the Secretary may designate there shall be an additional Assistant Secretary of Commerce, who shall be appointed by the President, by and with the advice and consent of the Senate, and whose compensation shall be fixed in accordance with the Classification Act of 1923 Except as otherwise specifically provided, the Secretary of Commerce shall administer the provisions of this Act and for such purpose is

authorized (1) to make such regulations as are necessary to execute the functions vested in him by this Act, (2) to make such expenditures (including expenditures for personal services and rent at the seat of government and elsewhere and for law books, books of reference, and periodicals) as may be necessary for such administration as may be provided for by the Congress from time to time; (3) to publish from time to time a bulletin setting forth such matters relating to the functions vested in him by this Act as he deems advisable, including air navigation treaties, laws, and regulations and decisions thereunder, and (4) to operate and for this purpose to acquire within the limits of the available appropriations hereafter made by the Congress, such aircraft and air navigation facilities, except airports, as are necessary for executing the functions vested in the Secretary of Commerce by this Act.

Definitions

SEC 9 DEFINITIONS.—As used in this Act—

(a) The term "citizen of the United States" means (1) an individual who is a citizen of the United States or its possessions or (2) a partnership of which each member is an individual who is a citizen of the United States or its possessions or (3) a corporation or association created or organized in the United States or under the law of the United States or of any State Territory or possession thereof of which the president and two-thirds or more of the board of directors or other managing officers thereof as the case may be are individuals who are citizens of the United States or its possessions and in which at least 51 per centum of the voting interest is controlled by persons who are citizens of the United States or its possessions

(b) The term "United States," when used in a geographical sense, means the territory comprising the several States Territories, possessions and the District of Columbia (including the territorial waters thereof) and the overlying airspace but shall not include the Canal Zone

(c) The term "aircraft" means any contrivance now known or hereafter invented used or designed for navigation of or flight in the air except a parachute or other contrivance designed for such navigation but used primarily as safety equipment

(d) The term "public aircraft" means an aircraft used exclusively in the governmental service

(e) The term "civil aircraft" means any aircraft other than a public aircraft

(f) The term "aircraft of the United States" means any aircraft registered under this Act

(g) The term "airport" means any locality, either of water or land which is adapted for the landing and taking off of aircraft and which provides facilities for shelter supply and repair of aircraft or a place used regularly for receiving or discharging passengers or cargo by air

(h) The term "emergency landing field" means any locality either of water or land which is adapted for the landing and taking off of aircraft, is located along an airway and is intermediate to airports by the airway but which is not equipped with facilities for shelter, supply and repair of aircraft and is not used regularly for the receipt or discharge of passengers or cargo by air

(i) The term "air navigation facility" includes any airport, emergency landing field, light or other signal structure radio directional finding facility, radio or other electrical communication facility, and any other structure or facility used as an aid to air navigation

(j) The term "civil airway" means a route in the navigable airspace designated by the Secretary of Commerce as a route suitable for interstate or foreign air commerce

(k) The term "airman" means any individual (including the person in command and any pilot, mechanic, or member of the crew) who engages in the navigation of aircraft while under way and any individual who is in charge of the inspection, overhauling or repairing of aircraft

SEC 10 NAVIGABLE AIRSPACE.—As used in this Act, the term "navigable airspace" means airspace above the minimum safe altitudes of flight prescribed by the Secretary of Commerce under section 3 and such navigable airspace shall be subject to a public right of freedom of interstate and foreign air navigation in conformity with the requirements of this Act

SEC. 11 PENALTIES —(a) It shall be unlawful, except to the extent authorized or exempt under section 6—

(1) To navigate any aircraft within any airspace reservation otherwise than in conformity with the Executive orders regulating such reservation

(2) To navigate any aircraft (other than a foreign aircraft) in interstate or foreign air commerce unless such aircraft is registered as an aircraft of the United States; or to navigate any foreign aircraft in the United States

(3) To navigate any aircraft registered as an aircraft of the United States, or any foreign aircraft, without an aircraft certificate or in violation of the terms of any such certificate.

(4) To serve as an airman in connection with any aircraft registered as an aircraft of the United States, or any foreign aircraft, without an airman certificate or in violation of the terms of any such certificate.

(5) To navigate any aircraft otherwise than in conformity with the air traffic rules.

(b) Any person who (1) violates any provision of subdivision (a) of this section or any entry or clearance regulation made under section 7, or (2) any customs or public health regulation made under such section, or (3) any immigration regulation made under such section, shall be subject to a civil penalty of $500 which may be remitted or mitigated by the Secretary of Commerce, the Secretary of the Treasury, or the Secretary of Labor, respectively, in accordance with such proceedings as the Secretary shall by regulation prescribe In case the violation is by the owner or person in command of the aircraft, the penalty shall be a lien against the aircraft. Any civil penalty imposed under this section may be collected by proceedings in personam against the person subject to the penalty and or in case the penalty is a lien, by proceedings in rem against the aircraft Such proceedings shall conform as nearly as may be to civil suits in admiralty, except that either party may demand trial by jury of any issue of fact, if the value in controversy exceeds $20, and facts so tried shall not be reexamined other than in accordance with the rules of the common law The fact that in a libel in rem the seizure is made at a place not upon the high seas or navigable waters of the United States shall not be held in any way to limit the requirement of the conformity of the proceedings to civil suits in rem in admiralty The Supreme Court of the United States, and under its direction other courts of the United States, are authorized to prescribe rules regulating such proceedings in any particular not provided by law The determination under this section as to the remission or mitigation of a civil penalty imposed under this section shall be final. In case libel proceedings are pending at any time during the pendency of remission or mitigation proceedings, the Secretary shall give notice thereof to the United States attorney prosecuting the libel proceedings

(c) Any aircraft subject to lien for any civil penalty imposed under this section may be summarily seized by and placed in the custody of such persons as the appropriate Secretary may by regulation prescribe and a report of the case thereupon transmitted to the United States attorney for the judicial district in which the seizure is made. The United States attorney shall promptly institute proceedings for the enforcement of the lien or notify the Secretary of his failure so to act. The aircraft shall be released from such custody upon (1) payment of the penalty or so much thereof as is not remitted or mitigated, (2) seizure in pursuance of process of any court in proceedings in rem for enforcement of the lien, or notification by the United States attorney of failure to institute such proceedings, or (3) deposit of a bond in such amount and with such sureties as the Secretary may prescribe, conditioned upon the payment of the penalty or so much thereof as is not remitted or mitigated

(d) Any person who fraudulently forges, counterfeits, alters, or falsely makes any certificate authorized to be issued under this Act, or knowingly uses or attempts to use any such fraudulent certificate shall be guilty of an offense punishable by a fine not exceeding $1,000 or by imprisonment not exceeding three years, or by both such fine and imprisonment

(e) Any person (1) who, with intent to interfere with air navigation in the navigable airspace or waters of the United States, exhibits within the United States any false light or signal at such place or in such manner that it is likely to be mistaken for a true light or signal required by regulation under this Act, or for a true light or signal in connection with an airport or other air navigation facility, or (2) who, after due warning from the Secretary of Commerce continues to maintain any false light or signal, or (3) who knowingly removes, extinguishes, or interferes with the operation of any such true light or signal, or (4) who without lawful authority knowingly exhibits any such true light or signal, shall be guilty of an offense punishable by a fine not exceeding $5,000 or by imprisonment not exceeding five years, or by both such fine and imprisonment

(f) All penalties paid under this Act, shall be covered into the Treasury as miscellaneous receipts

SEC 12 SEPARABILITY —If any provision of this Act is declared unconstitutional or the application thereof to any person or circumstance is held invalid, the validity of the remainder of the Act and the application of such provision to other persons or circumstances shall not be affected thereby

SEC 13 TIME OF TAKING EFFECT —This Act shall take effect upon its passage except that no penalty shall be enforced for any violation thereof occurring within 90 days thereafter

SEC 14 SHORT TITLE This Act may be cited as the "Air Commerce Act of 1926"

Approved May 20, 1926

Radio Equipment on the Airship Norge

The successful termination of the flight of the airship Norge from Rome to Teller, Alaska, across the North Pole, represents, from the standpoint of aerial navigation, one of the most remarkable flights ever made The part played by radio is, therefore, of extreme interest, more especially so as, in the fitting of the Norge, a considerable amount of attention was paid to the radio equipment From the Marconi company in England, complete information has been obtained relating to the radio apparatus with which the Norge was equipped

The airship was provided with special transmitting and receiving apparatus which made constant communication between the airship and land stations possible In this respect the apparatus functioned remarkably well, since it was only under the extremely stressing circumstances experienced in the vicinity of Point Barrow, Alaska, that communication was broken.

Of particular interest was the direction-finding system which enabled the navigators accurately to determine their position and course despite the fact that the compasses had reduced navigational value in the region of the pole itself, due to the earth's magnetic field effect and the fact that actually at the pole all direction is due South

Transmitter

The transmitter was an adaptation of the Marconi 0 5 kw Type U set and was suitable for continuous wave and tonic train signaling In order to meet the special conditions obtaining in the airship and to utilize to the best advantage the very limited space available, the principal components were mounted on a light teak baseboard These components comprised: Two Type T 250 Valves, H F choke, reaction condensers, Send-Receive switch, C W.-I C W switch, and measuring instruments for indicating aerial current, feed current, high tension volts and filament volts.

The aerial tuning inductance and variometer formed separate units and, used in conjunction with the airship's trailing aerial, a wave-range of approximately 550 to 1500 meters was covered On the transmitter, six to seven amperes were obtained in the aerial on the optimum waves and four to five on the extremes

The two oscillating valves were connected in parallel, and continuous wave signaling effected by a manipulating key connected in the grid circuit For tonic train signaling the grid circuit was interrupted by a small rotary interrupter

Storage Batteries and Generator

Power for the anode circuits of the transmitting valves and for charging the filament lighting batteries was derived from a combined H T and L T direct current generator developing 133 milliamperes at 300 volts and 14 amperes at 14 volts.

The generator was fitted just astern of the wireless cabin on a locker and was driven by a fan with a right-angled bevel drive The center of the propeller was about 5 ft from the side of the gondola, and the angle at which the propeller faced the air stream could be varied from inside the cabin by a special lever which could be adjusted and locked to suit the speed at which the ship was traveling or the rate required by the dynamo The propeller was of the four bladed type and capable of developing about 3 hp.

For emergency purposes, a horizontally opposed twin cylinder gasoline engine of 2¾ hp was mounted on a lightly con-

Wide World and International Newsreel Photos

Photographs of the Arctic flights At the bottom, left the Byrd plane is being ferried on a raft of small boats from the Chantier to the King's Bay shore Spitzbergen while at the top right, preparations are being made for the memorable flight to the North Pole and back At the top left is the hangar erected at King's Bay for the airship Norge The hangar had no ends nor had it a roof simple cables being stretched across the top between the side walls The nose of the Norge, after dismantling at Teller, Alaska, is seen in the lower right hand photo, together with numerous gasoline tanks As will be seen the nose of the airship was constructed somewhat along rigid lines, obviously for the purpose of enabling mast mooring the airship itself being a semi rigid type

structed tubular steel framework which could be quickly fixed just outside the gondola

A special type of fairlead was fitted in the base of the gondola for the trailing aerial, which was 300 ft long This fairlead enabled a new aerial and weight to be fitted while the airship was in flight should it be necessary.

Receiver

Special Marconi receiving apparatus was utilized both for direction finding and for ordinary service reception. A short wave two-valve receiver with a wave range of 10 to 100 meters was carried. The aerial for this apparatus was a short length of wire fixed between the wireless cabin and one of the engine gondolas

The direction finder loops were fitted diagonally round the outside of the envelope, the center of the loops coinciding with the lead-in to the radio cabin The loops consisted of two turns of wire, spaced about nine inches apart. The loops were doped to the fabric with linen tape, forming a neat and unobtrusive but very efficient fitting

The amplifier was provided with six type V 24 valves with resistance-transformer coupling for high frequency magnification and a type QX valve for rectification

For the reception of continuous wave, spark and telephone service messages a "plug-in" coil tuner covering a wave range of 300 to 25,000 meters was connected to the high frequency amplifier The tuner was a coupled circuit instrument provided with reaction coupling to the grid circuit

The chief difficulty in fixing the apparatus in the radio cabin of the Norge was lack of space, the operator's quarters being naturally somewhat cramped In fixing the instruments it was necessary to give more attention to convenience of wiring than to appearance, but in spite of every economy in space and weight the general effect was very workmanlike The receiving apparatus was fixed on two shelves one above the other on the interior wall of the cabin The whole forward wall of the cabin was taken up with the transmitter panel.

A narrow table was provided for the operator's writing and for the manipulating key on the starboard outside wall. Under the left hand side of the table the transmitter inductance was fitted to the floor A variometer for fine transmitter wave adjustments was also fitted on the left under the table Next to these instruments, on the right hand side, was fitted a small triangular cupboard for carrying spares.

The accumulators and dry batteries stood on the floor A double pole change over switch was fitted in the cabin and the 12-volt lighting mains for the ship were brought to this as well as the radio 12-volt supply This enabled the ship's accumulator and the radio accumulator to be charged in parallel from the radio generator, and, if the ship's main gave out, current could be supplied from the radio accumulator and vice versa The accumulators used for the ship's mains and for the Marconi apparatus were of the thin plate high discharge type and non spillable.

Commercial Aircraft Conference

On May 24 a joint conference of the Sub-Committee on Aerodynamics of the National Advisory Committee for Aeronautics with representatives of aircraft manufacturers and operators was held at Langley Field The meeting was the first of this nature held since 1916 Some of the party flew direct to Langley Field, but the majority went by boat to Old Point Comfort arriving there at 6 45 a m, and leaving for the Field at 8 15 a. m, after breakfasting at Sherwood Inn. A preliminary meeting was held in the Officers' Club after the party reached its destination, followed by an inspection of the atmospheric wind tunnel, variable density tunnel, power plants laboratories, seaplane hangar, propeller research equipment, and instruments. After lunch which was served in the N A C A dining room, a joint conference of the Sub-Committee and the representatives was held, during which several new projects were discussed and a review made of commercial aviation activities The party left for Washington after a demonstration of Army gunnery and bombing was given and a tour of the Field was made.

Among those present were Charles L. Lawrance, president of the Wright Aeronautical Corp, E T Jones, also of the Wright company; M W Mitchell, manager of the Ford plant in Norfolk, J F Victory, assistant general secretary of the N A C A, Washington, James G Ray, operations manager of the Pitcairn Aviation Co; Karl Arnstein, vice-president of the Goodyear-Zeppelin Corp, Hugh L Dryden, of the Bureau of Standards, William B Stout, of the Aviation Section, Ford Motor Co, W A Klikoff, of the Aircraft Development Corp, W G Brombacher, of the Bureau of Standards, A E Nesbitt, of the Fairchild Aviation Corp, T P Wright, of the Curtiss Aeroplane & Motor Co, Inc., C F Pape, secretary of Chas Ward Hall, Inc, Harold F Pitcairn Pitcairn Aviation Co; Agnew E Larsen and Robert W A Brewer, of the same concern, E E Johnson, McCook Field C C Champion, Jr, of the Bureau of Standards, Comdr E E Wilson, U S N., Bureau of Aeronautics; Major O Westover, U S A. S commanding officer, Langley Field; and Dr W G Brombacher, Bureau of Standards

The membership of the aerodynamics committee is as follows Dr Joseph S Ames, Johns Hopkins University, chairman, Comdr H C Richardson, U S N, vice-chairman, Dr L J Briggs, Bureau of Standards, Lieuts E W Dichman, A S, and W S. Diehl, U S N, Dr G W Lewis, Director of Aeronautical Research, National Advisory Committee for Aeronautics, Major Leslie MacDill, A S, Prof Charles F Marvin, Chief of U S Weather Bureau; Dr A F Zahm, Construction Dept, Washington Navy Yard, and Prof Edward P Warner, Mass Inst. of Tech

Members of the National Advisory Committee for Aeronautics and representatives of the aircraft industry at the conference recently held at Langley Field

Corrugated Metal Sheet in Aircraft Structures

Possibilities of Employing Corrugated Duralumin for Large Aircraft Components in Addition to Parts of Compound Structures.

THE USE of duralumin in aircraft construction is common practice with many airplane designers while the development of this alloy of aluminum has been very largely responsible for the successes in the construction of large rigid airships While there are undoubtedly disadvantages in the employment of duralumin for many classes of aircraft construction, its very favorable Strength/Weight ratio renders this material peculiarly adaptable in the aeronautical field Duralumin has been employed largely in sheet form in airplane construction and it will be recalled that the proposed airship to be produced by the Aircraft Development Corp will be of duralumin construction throughout, the entire skin being composed of duralumin sheet Other

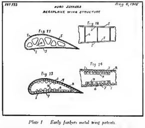


Plate I Early Junkers metal wing patents.

forms in which duralumin has entered largely into aircraft structures are the numerous strip sections and also in the form of both round and square tube A type which has been employed to a limited extent and which offers wide possibilities for further development is that of corrugated sheet material The scope over which corrugated duralumin or other aluminum alloy can be employed in aircraft manufacture has been studied by F E Loudy, an aeronautical engineer of Cleveland, Ohio, and he has prepared a series of notes and a number of interesting photographs relating to the various possibilities of this class of material in aircraft structures.

It is pointed out that corrugated sheet has been employed in building construction for many years As an example,

Plate II A corrugated web metal wing spar failing under static load test

a patent was issued as long ago as 1861 for constructing fireproof buildings of multi-ply sheets of corrugated iron with their corrugations arranged at right angles and united at the points of contact However, the employment of corrugated metal construction in airplanes dates back ten and possibly a few more years In 1915, the German designer, Herr Hugo Junkers advocated the application of corrugated sheet metal to the construction of all-metal airplane wings Reprints from the Junkers patent show, in Plate I, figs. 11 and 12, the method of combining a flat outer skin with a corrugated reinforcement sheet and metal ribs to maintain the section, while in figs 13 and 14, a ribless type of metal wing construction is shown, which involves the employment of multi-ply stiffening Junkers planes were the first to employ corrugated metal construction in both wings and as a fuselage covering, in each case the inherent stiffness enabling considerable reductions in the extent of the internal structure This class of construction has later been adopted in this country in the Stout all metal monoplane.

Mr Loudy notes that some years ago, Short Brothers, one of the leading constructors of aircraft in England adopted corrugated web wing spars in one of their planes The compound spar consisted of an upper and lower beam of

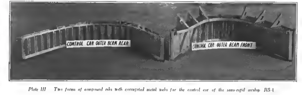


Plate III Two forms of compound ribs with corrugated metal webs for the control car of the semi-rigid airship RS-1

wide "U" section metal with a corrugated metal web. The spar was employed such that lift forces were taken at right angles to the plane of the corrugations. A sample spar of this construction was statically tested as a loaded beam suspended at each extremity. An accompanying photograph (Plate II) shows the type of failure which resulted when the

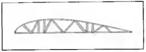


Plate IV Method of applying corrugated metal to wing rib construction

concentrated load, applied at 27 in. from one end, reached 835 lb. The spar was 120 in. long, 6 in. deep with an aluminum alloy web of corrugated sheet .015 in. thick.

In Airship Structures

This type of construction is admirably suited to the construction of curved spars and beams and has, in fact, been so employed in the construction of the control car of the U.S. Army semi-rigid airship, RS-1. Examples of these structural parts of the control car are shown in Plate III which gives a very good idea of the structural details of two forms of compound ribs of the RS-1 control car.

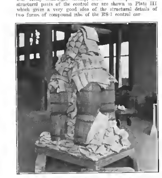


Plate V A corrugated duralumin flooring under static test. The floor withstood a static load of 250 lb./sq. ft.

In airship construction, the employment of corrugated metal in the structure is fairly common, especially in the construction of built up metal girders of the now well-known type. This particular type of structure is advocated by Mr. Loudy as adaptable in the building of airplane wing ribs, where all webs are omitted and the rib cap-strips reinforced by means of an irregular Warren truss system formed of metal battens with longitudinal corrugations, as depicted in Plate IV.

Applicable to Large Structures

That the adaptation of the corrugated metal sheet system is very well suited to complete structures and is not necessarily confined to small units in compound structures, is indicated by the fact that large surfaces, such as floors for airship cars, etc., may be so made to carry very large loads. Plate V shows a static test upon a specimen of flooring of this type measuring 36 in. by 36 in. and composed of an upper sheet of duralumin of .015 in. thickness and with ⅝ in. corrugations and a lower sheet .040 in. thick with 2½ in. corrugations. The flooring withstood a static load of 250 lb. per sq. ft. without failure and itself weighed only .872 lb. per sq. ft. Furthermore, in Plate VI a duralumin keel walkway

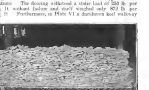


Plate VI Duralumin keel airship walkway with corrugated metal surface under static load of 500 lb. per ft. run

girder with a corrugated duralumin surface is shown which failed under a static load of 500 lb. per ft. run. The girder was 120 ft. long, of equilateral triangular section of 11 in. side. The tread was of .015 in. sheet with 1¼ in. corrugations, while the webs were .019 in. gauge lattices. The complete girder weighed 1.1 lb. per ft. run.

Calculating Loads

Mr. Loudy advocates the following equation for calculating the uniform load which may be carried by corrugated sheet in bending, and appends results of tests on corrugated aluminum alloy sheets, as follows:

W = Total allowable uniform load, in pounds
b = Overall width of sheet, in inches (b 1.075 x covering width)
l = Unsupported length of sheet, in inches
t = Thickness of sheet, in inches
d = Depth of corrugations, in inches
f = Allowable fiber stress, in pounds per sq. inch

$$\text{Then: } W = \frac{8fS}{l} = \frac{8f}{l} \times \frac{4bdt}{15} = \frac{32fbdt}{15l}$$

RESULTS OF TEST ON CORRUGATED SHEET

.04 in. x 1¼ in. corrugations

Number of Corrugations	Length	Crippling Load, lb	Area	P/A lb./sq. in.	P/A increase per cent
1	3 in	1,400	.058 sq in	24,100	
2	3 in	4,155	.116 sq in	35,800	49
3	3 in	6,748	.174 sq in	38,700	61
1	6 in	1,360	.058 sq in	23,420	
2	6 in	3,635	.116 sq in	31,300	34
3	6 in	6,124	.174 sq in	35,200	50
1	9 in	1,150	.058 sq in	19,800	
2	9 in	3,255	.116 sq in	28,050	42
3	9 in	4,865	.174 sq in	27,900	41

¾ in. corrugations

SINGLE CORRUGATED STRUTS

Gauge	Area Sq In	Length of Strut	Length Overall	Weight Pounds	Grip Load Lbs	Av. Grip Load Lbs	P/A Lbs Per Sq In	Strength Weight Ratio	P/A Increase per cent
.015	.0285	7⅝	7⅞	.0230	206				
.015	.0285	7⅝	7⅞	.0230	237				
.015	.0285	7⅝	7⅞	.0230	235	205.8	10,380	15,410	
.015	.0285	14¼	14⅝	.0425	148				
.015	.0285	14¼	14⅝	.0425	158				
.015	.0285	14¼	14⅝	.0425	160	155.0	5,440	6,640	
.020	.0380	7⅝	7⅞	.0285	263				
.020	.0380	7⅝	7⅞	.0285	357				
.020	.0380	7⅝	7⅞	.0285	287	339.0	8,450	12,600	
.020	.0380	14¼	14⅝	.0550	241				
.020	.0380	14¼	14⅝	.0550	248				
.020	.0380	14¼	14⅝	.0550	243	244.0	6,420	4,440	

DOUBLE CORRUGATED STRUTS

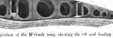
Gauge	Area Sq In	Length of Strut	Length Overall	Weight Pounds	Grip Load Lbs	Av. Grip Load Lbs	P/A Lbs Per Sq In	Strength Weight Ratio	P/A Increase per cent
.015	.0570	9⅝	10⅛	.0375	970	970.0	17,000	15,850	
.015	.0570	14¼	14⅝	.0650	550				
.015	.0570	14¼	14⅝	.0650	475	512.5	9,000	8,030	65
.020	.0760	9⅝	10⅛	.0744	1078	1078.0	14,110	14,450	
.020	.0760	14¼	14⅝	.1100	574				
.020	.0760	14¼	14⅝	.1100	637	605.5	8,620	5,950	64

The Vickers-Wibault Fighter

An All-Metal Single-Seater Pursuit Plane of French and British Origin.

AN INTERESTING new single seater fighter airplane is now being produced by the well-known British firm of Vickers Ltd. It is understood that a number of these machines are being built for the Chilian Government. The plane is known as Type 7C.1 and was designed by M. Michel Wibault. It is a high-wing braced monoplane of all-metal—duralumin—construction, in which the requirements of simplicity of structure, maintenance, and repair have been given paramount consideration. From a close inspection of the photographs, it would appear that the propeller is not metal but of the normal wood type.

The wing is of thick section and is of purely rectangular shape with the exception of that part cut away over the pilot's cockpit. The section, however, tapers appreciably in thickness toward both the wing tips and the center line from the point of the bracing strut attachments. This variation in thickness is so designed as to give a spar depth varying such that the strength of the beam is uniformly distributed according to the loading carried.

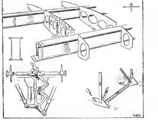


A portion of the Wibault wing, showing the rib and leading edge arrangements

The simplicity of the wing structure is notable. The main spars are of box construction. The side members are flanged top and bottom and the top and bottom members are plain metal strips rivetted to the flanges. These members are double throughout. The ribs, which are compounded of three individual and separate pieces, are secured to the spars by means of vertical flanges rivetted to the sides at intervals. The ribs project above the normal profile and covering sheets which have flanged-up ridges are rivetted through these edges and the ribs, thus both faces of the rivets are exposed. Furthermore, the ribs do not extend to the leading edge, this being formed of a shaped strip of duralumin rivetted to the covering of the rest of the wing.

The ribs themselves consist of simple sheets of metal lightened and strengthened where necessary. Being made in three pieces, they are secured to the spars in the following manner: first, the forward section, rivetted to a flange on the side of the front spar, then the middle section rivetted to the corresponding flange the other side of the spar. This middle section is secured to a flange on the rear spar in a similar way and finally the rear section of the rib secured to the rear of the rear spar on a flange. Drag struts in the wing structure are of duralumin tube carried from stiff brackets rivetted to the main spars.

The wing is built in two sections joined on the center line. The rear spar joint is a simple hinge but the front spar joint consists of hinge-like fittings on the top and bottom of the spars joined together with two heavy bolts. The entire structure



Courtesy of The Aeroplane

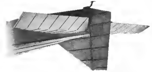
General structural details of the Wibault. At the top, the general scheme of wing structure is shown with on the left a section of the spars, and in the right corner, the method of fixing the covering to the ribs. Bottom left, the arrangement of the control lever showing the gear and push rods for the ailerons. Right, fuselage details of angle and T section duralumin

has been found to be very rigid in torsion and entirely satisfactory.

Unlike the wings, which are, to a large extent, dependent upon the covering for rigidity and strength, the fuselage, though metal covered has a robust metal frame structure.

The Vickers-Wibault single seater fighter (Bristol Jupiter engine)

The undercarriage is of the axle-less type and is of steel construction. Shock absorption is provided by the Vickers oleo-pneumatic shock absorbers. The fittings for the undercarriage at the fuselage also serve as attachments for the wing bracing struts which extend from the fuselage lower longeron to points about two-thirds of the semi-span from the center line on each side. These bracing struts consist of parallel stream-line tubes. The center bracing and support for the wing panels is formed of a cabane of streamline tubes, as seen in the drawing.

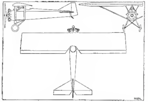


The tailplane is of triangular plan form and has but one spar, which is parallel to the leading edge. The elevators are built on a single tube hinged to the main stabilizer. This tube serves the purpose of the rear spar of the tailplane. The tailplane is braced by two tubes, one on each side, on the under side. These tubes support the extremities of the tailplane front spar and the hinge tube ends where these coincide at the tips of the tailplane. The tailplane is adjustable in flight by raising or lowering the front spars around the elevator hinge tube as center.

The ailerons are of very narrow chord but extend over the entire span being divided in the middle where the wing is cut away over the pilot's cockpit. They are operated entirely from the inner end of the tubular front spar upon which the ailerons are built. The control stick operates the ailerons through push and pull tubular rods operated through segmental gears. Elevator and rudder controls are connected to levers on a lay shaft in the end of the fuselage through cables. From one of these levers one push-and-pull rod runs to a central elevator lever in the fuselage. From the other a similar rod runs to a lever on the starboard side of the rudder.

The engine is a 420 hp air-cooled radial Jupiter mounted upon a metal back plate which is detachable with the engine. Gasoline and oil tanks are of duralumin, entirely free from welded joints. The joints in the tanks are made between up-turned flanges of individual sheets. One of each pair of flanges is made twice as deep as the other and then turned around the first flange and rivetted. The joints are coated with a leak-proof cement.

In performance the Wibault is reported to have functioned well, and the plane is pleasant to fly. The take-off is quick and the climb and speed at altitude good. It is also said that, in spite of the wing loading (nearly 14 lb per sq ft), the machine can be flown under perfect control at very low speeds.



Courtesy of The Aeroplane

General outline drawings of the Vickers Wibault

The general characteristics of the plane are as follows:

Span	36 ft.
Length	23 ft. 7 in.
Height	9 ft. 8 in.
Wing area	237 sq. ft.
Weight empty	1,822 lb.
Weight loaded	3,183 lb.
Wing loading	13.4 lb./sq. ft.
Power loading	7.58 lb./hp.
Speed at 16,400 ft.	130 m.p.h.
Climb to 16,400 ft.	15 min. 17 sec.
Ceiling	27,800 ft.
Landing speed	57 m.p.h.

The Vickers-Wibault all-metal single seater fighter recently produced in England. The machine is fitted with a Bristol Jupiter radial air-cooled engine of 420 hp

New York-Buenos Aires Flight

The Buenos Aires, the Savoia seaplane which Bernardo Duggan and two Italian pilots are using in their flight from New York to the capitol of the Argentine Republic, during the first four days of the journey encountered continuous storms and winds. From Miller Field the first stage of the flight led to Hampton Roads, uneventful except for some minor engine trouble and rain. Strong winds caused the pilots to spend the night at Charleston, S. C., instead of continuing to Florida, as had been planned for the second stage.

The third part of the flight, from the U.S. Naval Station at Charleston, to Miami, was covered in 6 hr. 12 min., being the longest of the three hops. The maximum of cruising speed was maintained throughout this jump, in spite of the fact that the storms continued. The start of this hop was unusually favorable from the weather standpoint. The sun was shining and winds were fair. The storm was sudden and serious. With rain falling and the wind directly in the pilots' faces, the plane flew into clouds of some density. Up to this time the plane had been cruising at an altitude of 2,000 ft. and after consultation it was decided to take the Buenos Aires to an altitude of 3,000 ft., which brought it out of the clouds. At Jacksonville the plane descended through the clouds.

The fourth day of the flight, from the Florida Keys into Havana, began at 7:30 a.m. in heavy fog. Directly over the Keys, Captain Olivero detected a fast-approaching mass of clouds, and its accompanying headwind brought a decision to return to Biscayne Bay. A lower level was made and at a speed of 125 m.p.h., with the storm wind behind, the plane sped to its haven. The flight to the Keys and return to Biscayne Bay took 1 hr. 45 min. Weather continued unfavorable, and, although the plane had not suffered from its experience, it was decided to wait until the morrow for the hop to Havana.

The favorable weather of May 28 gave the fliers the opportunity for the delayed flight from Biscayne Bay to Havana. Under the most pleasant conditions encountered up to this time, the plane made this lap of the trip in 2 hr. and 18 min., the members of the party receiving an enthusiastic welcome in the Cuban capital.

Havana to Port au Prince, and from that city to San Juan has been a steady record of storms and winds. The only important happening was a collision with a launch in the take-off at Port au Prince, causing a delay of a day. The U. S. Marine Squadron made necessary repairs, permitting the fliers to reach San Juan June 3 where a rest of another day was taken.

Detroit-Grand Rapids Air Mail Contract

By direction of the Postmaster General an advertisement has been issued inviting proposals for the operation of a contract air mail route as follows:

> DETROIT, MICH., to GRAND RAPIDS, MICH., and RETURN, with such intermediate stops as may be agreed upon later.
>
> Service to be not less than six round-trips per week, and on such a schedule as may be found most advantageous to the Department and the contractor. Distance 142 miles each way.

The route is open to bidders regardless of residence, and bids will be received at the Department in Washington until noon of July 26, 1926.

The schedule to be adopted will require an average flying speed of approximately 90 m.p.h. The Department realizes that in some instances, due to weather conditions, etc., it may be impracticable to maintain such an average, but under favorable conditions even better time may be possible. Proper allowance will be made in all such cases.

The Department reserves the right to modify or change the schedule adopted if the needs of the service demand and operating conditions will permit.

Contracts are limited by law to not exceeding a four-year term.

Proposals should show the rate of compensation stated in percentage of revenue, which must not exceed 80%—the maximum allowed by law.

The postage rate over contract air mail routes is 10 cents an ounce or fraction thereof where the length of the route is not over 1,000 miles, 15 cents up to and including 1,500 miles, 20 cents where the length is over 1,500 miles, with 5 cents additional for each zone traveled over the transcontinental government operated route.

Airplane Explores Dutch New Guinea

Prof. Matthew Stirling, head of the expedition which is exploring the interior of Dutch New Guinea, has reported by wireless, from the expedition's pioneer camp at the foot of Snow Mountain, that a recent flight made with the Yackey Transport plane has been a complete success. This is the first flight of an airplane to this section of the earth, where dwell tribes of pygmies almost unknown to civilized man.

The flight lasted an hour and a half and was productive of important geographical discoveries. An excellent reconnaissance of the territory was reported, as well as the sighting of native villages. Troops, furnished by the Dutch East Indian Government, are aiding the expedition.

The Savoia seaplane, Buenos Aires

We Have a Propeller Complex?

By PILOT C. K RODGERS

My friend Sam, who, by trade, is an Aerial Photographer, took unto himself a saw, hammer, a faw nails and some old boards and proceeded to hatch out what gradually assumed the form and shape of an airplane, belonging to the species monoplane. To complete the general appearance, he nailed onto the already assembled fuselage, a pair of DH9 wings procured from a local Government flying field

Now, with a pardonable degree of pride, I state that I helped friend Sam build what we hoped would be a successful flying machine Certainly, I helped Did I not hand him the hammer and nails quite often? Did I not help put the wheels on? Of course, Sam did the rest of the work but I helped that much anyway I felt that I would be doing my part as the pilot during the first test. Thanks to ex Lieut. Walter Meyer, of Chicago, I can class myself a pilot Is there one of his old pupils with soul so dead, that he cannot remember and admire the grim patience of that dear old instructor, as he daily risked his life in a superannuated old Standard J1, with a student who over-controlled and seemed sure bent to put the old crate into a tail spin at 500 ft? Since then, I have flown thousands of miles, met many pilots, read of the deeds of many more, but, deep in my heart, I believe my old instructor is the best pilot in the whole world, bar none (We all feel that way about our instructors)

But now, finally, our newly built monoplane was ready for a test Sunday afternoon we wheeled her out of the improvised hangar into the field and soused her two cylinder Lawrance engine with gas and oil To friend Sam, fell the honor of being the first to taxi her across the field, providing, of course, that the engine responded when I twisted the prop

"Switch off", called Sam I proceeded to wind her up for compression, and, incidentally, posed for the admiring throng of small boys who were watching

"Contact", I yelled "Contact", repeated Sam I swung the prop over The engine coughed a couple of times, spit twice and started throwing dirty oil back in Sam's face. He was going down for the third time when I jumped to the rescue and cut the switch, thus stopping the engine and also the flow of oil so Sam could get his mouth shut "Phew, that tastes worse than castor oil," sputtered Sam

We procured a soap box to stand on and, after a careful survey of the innards of that Lawrance engine, we diagnosed the case as—oil in the cylinders, caused by shipping the engine to us in an upside down position After a conference, we decided the best plan was to start the engine and let the excess oil in the cylinders burn out With the bravery that is known only to airmen, Sam volunteered to again face that flow of hot dirty oil (Upon my advice, he donned a pair of water wings in case it got too deep to wade out)

In half an hour the excess oil was burned out and the engine started acting as every self respecting engine should. Sam promptly gave her the gun and started across the field Reaching the far side of the field he decided to come back by a different route. Halfway back the wheels slid into a drainage ditch and stood the plane on her nose This occasioned a delay of a week until we could get a new propeller

The following Sunday afternoon, it was decided that I was to Hop the machine,—in other words, take her up After warming up the engine, I gave her the gun and took off Unknown to me, the oil pump connection had worked loose as I left the ground The oil was all forced out and the engine stopped dead at 25 ft and directly over a neighbor's chicken house The natural result, as I did not have sufficient altitude to glide down safely, was for the Law of Gravity to enforce itself, much to the dismay of a flock of chickens as I crashed through the chicken house roof After several hours hard labor, we got the plane back in the hangar and, during the following week, we patched her up and put on a new prop

Another beautiful Sunday afternoon and I crawled into the cockpit and took off During the previous week we had patched up the plane but had neglected to tighten the wires I got her up to 1,000 ft and flew around for an hour and came back to the field I throttled her down and started a long glide to the field As I neared the field, about 50 ft. up, I heard a splintering of wood I looked up just in time to see my left wing crumple up The whole machine swerved to the left sharply and fell in a left spin She crashed,—landing on the broken left wing and then the nose. I was not hurt a bit, but, gosh, we had to send for another propeller

Another week passed and we attached a new prop, new wing and new wires Saturday afternoon, we gave her another trial and everything went well We got 55 miles to the gallon of gas Everything looked favorable for a clear morrow so we let the plane sit out all night. About midnight a violent wind storm blew up and tossed our machine over two fences and a road into a neighbor's field When we found her next day she was unharmed except for a few loose wires and a broken propeller. We took down a section of fence and wheeled her back to the hangar to await the arrival of a new prop!

Well, to cut a long story short, we broke three new props since then, and now have the machine stored for the Winter. We bought enough propellers to keep the Army Air Service flying steady for two years, had we given them to the Service So, somewhat disgusted with the brittleness of propellers in general, Sam and I went over to Harrisburg and tried to drown our sorrows in a couple of weak coca colas.

The Kohnert Photoplane (30 hp Lawrance A2 engine), which was built by S W Kohnert of Camp Hill, Pa., and the history of which is related above

Naval Air Bill Passed By Senate

On June 3 the House bill, which would authorize a five-year building program for the Naval Air Service, was passed by the Senate. It was approved with some amendments, which means it must go to conference for adjustment of differences between the House and Senate.

The measure, which provides for an estimated outlay of $85,000,000 during the next five years, was passed without debate and without a record vote.

Provision is made for the construction of 1,947 planes, as well as two rigid airships, and the maintenance of a minimum strength of 1,000 airplanes in use.

The airships, of a type suitable for use as adjuncts to the fleet, would be of approximately 6,000,000 cu ft each, and $8,000,000 was set as the construction cost for both

By years, the following heavier-than-air craft construction would be authorized 1927, 235 planes, $12,285,000, 1928, 313 planes, $16,223,750, 1929, 335 planes, $17,582,500, 1930, 357 planes, $18,941,250, and 1931, 374 planes, $20,046,250 Provision also is made for the building of 333 other planes.

Planes Will Map Alaska

The project of surveying Alaska by air and making maps of this territory was undertaken by the Bureau of Aeronautics on May 24, when three Navy Loening Amphibians, especially fitted for aerial photography and observation work, left San Diego, Cal. At Seattle a fourth plane will be added to the group

Lieut B H Wyatt is in command of the expedition and will work under the supervision of Admiral Charles F Hughes, commander-in-chief of the Pacific battle fleet Seven officers and 37 enlisted men accompany the expedition The party will be quartered on a 250-ton ammunition barge, converted at the Bremerton Navy Yard into a floating home for the personnel It will be towed along the Alaskan coast, as the work progresses, by the aircraft tender Gannet, on which the party, with the exception of the airplane pilots, has sailed

During the Summer and early Autumn, 40,000 sq miles of the Alaskan Peninsula will be mapped, as the first steps in a plan to investigate fully the mineral resources of this territory This includes the great stretches of mountains, forests and rivers of this country, the Geological Survey and the Forestry Service being particularly interested in the results obtained

All the planes used in this expedition have been equipped with standard steel, adjustable pitch, all metal propellers, manufactured by the Standard Steel Propeller Company

As an example of the possibilities of the rapidity of charting by aerial photography, it is possible for three planes, flying in a line five miles apart and at 100 m p h , to map a strip 200 miles wide and 100 miles long or 2000 sq miles, in one hour In actual practice, however, areas of this size will not be mapped in one flight unless unusual atmospheric conditions exist

The mapping will be done from an altitude of 12,000 ft., and one of the greatest difficulties the aviators will have to encounter will be to avoid clouds which will obstruct the area to be charted

Dinner for Captain Fonck

Captain René Fonck, French aviator, who plans a flight from New York to Paris this Summer to win a $25,000 prize offered by Raymond Orteig, was chief guest on May 18 at a dinner given by the Automobile Club of America, 12 East Fifty-third Street

Captain Fonck said that he had not decided when he would hop off Thirty Americans have asked the privilege of accompanying him as navigator or radio operator Among the number is Lieut Leigh Wade, one of the Army fliers who flew around the world Others mentioned were Capt Homer M Berry and Lieut. Robert Fogg, reserve officers in the Army, and Lieut. Comdr A R Snody, U S N

Dave H Morris, President of the Club, who was toastmaster, read letters from well-wishers, including President Coolidge, Governor Smith, Postmaster General Harry S New, General Charles P Summerall Rear Admiral Charles P Plunkett and Admiral Moffett

"Side Slips"

By ROBERT R OSBORN

In New York, recently, one of the river steamers was rammed by a barge and had to be beached in order to save the passengers and crew. The New York papers had all sorts of headlines and special notes calling attention to this "remarkable piece of seamanship" on the part of the captain Somehow, this remarkable piece of seamanship doesn't impress us very much, and so far we have failed to join in with our cheers and adulation for the captain In fact, our opinion is that any child in or above the eighth grade in school would have thought instantly of the same maneuver for saving a sinking boat.

If the reading public wants its news served up with this sort of "applesauce", aeronautical news will have to be spiced up quite a bit if it is to arouse any interest. We think it was Lady Astor who once "displayed remarkable presence of mind" in stepping out of the path of a runaway horse. Another time, a prominent politician was heartily congratulated by the newspapers for running out into the street when his home caught fire And so it goes,—we have been expecting to read any time now that President Coolidge had saved himself from death by starvation by eating a large dinner

The correspondents in the "Airports and Airways" section of AVIATION might add a little coloring to their reports by some items along the following lines,—"George Smith displayed presence of mind Wednesday afternoon by bringing his plane to the ground when the engine stopped" or "The pilot undoubtedly saved his life by jumping out of his plane with a parachute when the wings fell off, using remarkable aeronautical judgment"

• • •

The sudden great interest in Dormoy's Flying Bath Tub seems to have fallen off quite a bit since the judge in the Earl Carroll case sentenced Mr Carroll to a year's imprisonment and $2000 fine for his girl-in-the-tub-of-wine party

• • •

The recent unsuccessful attempt to take up a 586 lb passenger at Atlantic City reminds us of another passenger we'd like to see some time We have reference to the passenger carried by some of the newer designs of airplanes in making the performance records claimed for them Our impression of him is that he weighs about thirty-five pounds and has a perfect streamlined head

• • •

The reports from Mr Goldstrom, who is attempting to circle the globe in thirty-five days, have been somewhat disappointing so far He seems to be keeping ahead of his schedule all right, but there hasn't been a single complaint about the service on any of the commercial air routes he has used. Unless Mr Goldstrom hastens to enter such a complaint in one of his reports, someone else may establish himself as the first hard-boiled air traveler

• • •

H H F, Jr disagrees with our statement that commercial aviation can be said to have "arrived" when the citizens start holding indignation meetings to demand better service on the lines He claims that this means of traveling cannot be accepted as approved by the public until the chap next to you in the smoking compartment of the express plane leans over to say "What line of goods are you selling in this territory, Buddy?"

• • •

It pleases us very much that the Los Angeles has been able to fly a few times this year without fighting any terrific gales. It has only been lately that the ship has been allowed to go anywhere, by the newspapers, without fighting desperately against a couple of cyclones We're not saying that the ship hasn't been through some heavy blows you understand,—it's just that we were living near Lakehurst, N J last year and seemed to have completely overlooked most of the terrific gales that were raging thereabouts

AIRPORTS AND AIRWAYS

Pittsburgh, Pa.

By Ray A. Tucker

On Thursday, April 29th, the Aero Club of Pittsburgh observed "Inspection Day" at Rodgers Field, the Pittsburgh Airdrome The program was arranged primarily to entertain the Mayor, members of City Council, County Commissioners and thirty other city and county officials in order to have them inspect the Field and to promote the organization of an air board to operate the field

The Aero Club has suggested a board composed of five members, representing each of the following City of Pittsburgh, County of Allegheny (joint-owners), Aero Club, Chamber of Commerce and the air service officer in charge of Government flying activities, as this is also leased as a Reserve Army Training Field

Before proceeding to the Airdrome, all the officials were guests of the club at its regular luncheon Several ships were on the line at the Field and many of the officials took their first hop and were delighted with the experience

On Saturday afternoon, May 8, a large crowd witnessed the Aero Club's first Boys model airplane contest at Rodgers Field, which proved a great success for all concerned The contest was divided into two groups, one for duration and one for model construction Eighty models were entered in the two contests, but because of a strong wind, no records for flight were broken by the flying models. There were some cleverly constructed still models, patterned from large ships, and a few bore the ear-marks of originality, but without due regard for their flying possibilities The longest flight was only fifteen seconds.

Only boys under eighteen years of age participated The wing spread of the flying models was limited to forty inches, propulsion accomplished by rubber strands and construction by the boys themselves, except for small metal fittings, etc., which could be purchased ready-made.

The ten prize-winners in the flying contest in their order were Thomas Rife, Thomas Truly, Alex Blair, Joe Lutz, Charles Mayer, Wilbert Niemeir, Henry Gilmore, Kenneth McAdam, Robert Ballantyne, William Patterson And for the model contest William N Poellet, William J Gonder, James Cook Dan Bolner, James Bent, Norman Wurzer, George Bollinger, Arthur Willets, John F Kissinger, Henry C Gilmore

Bicycles, camping outfits, cameras, and other sporting equipment, including two subscriptions to AVIATION, comprised the prizes, with a choice of one article from several in each prize group Congressman James M Magee, a member of the club, presented to the winner of the model contest, a

Prize winners of the Pittsburgh Model Flying Contest (Left to Right) —Thomas Rife Thomas Truly Wm J Conder (Winner in Model Contest) Alex Blair Joe Lutz Charles Moyer Wilbert Niemeir Henry Gilmore Kenneth McAdam, and Robert Ballantyne

silver cup William J. Gonder of Akron, Ohio, also won a wrist-watch as a special prize for the best seaplane model. Mr Russell J Brinklay presented an aeronautical book to James Curtis for originality in design.

A flying exhibition, for the benefit of those present, followed in which six pilots used three of the Field's Government Jennies, and one Woodson Express, Curtiss Oriole and Standard.

Members of the club in charge of the contest were. Halsey R Bazley, General Chairman, Frank Kinnard, Asst General Chairman, Raymond M. Marlier, Flying Contest, Ray A. Tucker, Model Contest, H. Frank McCaffrey, Registration; Earl T. Moores, Prizes, Lieut. Royal B Lea, Flying Exhibition

Judges for the model contest were Col Harry C Fry, Jr, Hon James M Magee, Col Wm Thaw, Lieut Royal B Lea and Ray A Tucker.

Judges for the flying contest were: Louis T. Barry, Robert E Dake, Robert A Laedlein, Raymond M Marlier, and Robert C Wentz

Capt. Bill Day is now showing off his new Woodson Express, the agency for which he and Bill Beatty have jointly obtained Jack Morris and Frank Ambrose are busy giving flying instruction to many local embryo pilots William T Richmond, of the Richmond Aviation Service of Homestead, Pa., has leased a field at Finleyville, Pa, where he is doing a passenger carrying business with his Hisso-Standard. 1st Lieut. John J Feery, AS ORC, took off from Rodgers Field with a Government Jennie last week and was unfortunate enough to have to make a forced landing on an adjoining golf course, hitting a bunker, resulting in a broken arm for himself and a washed-out ship

Oenver, Colo.

"General" Billy Mitchell was a Denver guest May 10 and 11 He arrived at noon May 11 and his train was met outside of Denver by a squadron of planes and escorted to the station, where a number of his Army friends met him.

Tuesday noon he was the guest of honor at the Air Service Reserve Officers luncheon, where he made an interesting talk on commercial and military aviation and their needs After lunch, he inspected the Alexander Aircraft Factory and spoke highly of the Eaglerock's construction and performance Tuesday evening in his speech at the Auditorium he gave some interesting information on our air defense, or rather lack of it, and impressed a large audience with the forcefulness of his arguments

B H. Braughman, formerly an air mail pilot between Cheyenne and Omaha, has joined the Alexander Aircraft Company as pilot and final assembly man

The air mail between Pueblo, Denver and Cheyenne is scheduled to start June 1 Mr Joseph of the Colorado Airways has his equipment and personnel in shape and expects to carry real pay loads each trip between the above cities. The Denver Chamber of Commerce is planning a celebration on opening day

J. Don Alexander, President of the Alexander Aircraft Company, will leave June 1 for California with an Eaglerock plane for a sales promotion trip throughout California, Oregon and Washington, returning by way of Spokane, Pasco, Elko and Salt Lake

J A McInaney and Bill Gorman are at present in Kansas City with an Eaglerock, but are headed east and will make Iowa, Indiana, Illinois and Michigan, and will be in Flint in time for the Air Meet there in June

Denver is to hold a National Mile High Air Meet August 1 and 2 Announcements of prizes and program will be made in the near future This is to be the first meet ever held in Mile High altitude and the prizes offered will make the contests interesting to all commercial pilots

Orly, France, Airport Under Construction

Orly, situated a few miles above Paris on the Seine, is the scene at present of great construction activities, owing to the

building of a new airport at the Orly airdrome of the naval air service. This will include a concrete hangar, shed, quarters for officers and men, repair shops, a railway running to the Paris-Orleans railway and other features which will make this airport one of the largest and finest in the world.

Santa Barbara, Cal.

By Earle Ovington

Dr J Bert Saxby Jr has been experimenting with dusting walnut trees from his Jenny and he reports that he is about to close several contracts with large walnut growers. His experiments have been very successful. He certainly lays a wicked poison screen as we can testify on the airport when he pulled his dusting valve open one day last week just after taking off. The arsenate of lead nearly put us all out of business.

Brea, a little burg in California with more push and pep to the square inch than most other towns ten times its size, pulled off one of the most successful aviation meets hereabouts a short time ago. The usual events were pulled off, the Jenny Scramble proving the most interesting to fliers and laymen alike. Art Goebel won it with ease. Art must have put compression plates on top of his OX-5 pistons, saturated his gas with picric acid, and double-ought sandpapered his doped surfaces to cut down the resistance. His Jenny certainly stepped out ahead of anything else of this breed on the field.

I've just completed a new hangar for my Swallow. And as we sometimes (at only very rare intervals, mind you—adv.) get some pretty stiff winds I've anchored it down to earth to stay. I put in sixteen cement piers and bolted 4" x 8" redwood mudsills to these piers. And I put in doors that open so easily that all I have to do is to apply a couple of pounds of horizontal pressure to expose my ship to the public gaze.

In Los Angeles, a couple of weeks ago, the California Development Association held their first aviation meeting and got solidly behind the landing field problem. At least they did so far as nice speeches were concerned. If all the things had been accomplished that have been covered by after-dinner speeches at aviation meetings, what a flying world this would be! If the Association would have a letter sent out regularly, and quite frequently, to every chamber of commerce in the state urging a municipal landing field if none were available, or the improvement of the existing one, some good might result.

Which reminds me. Everybody was heard from at the meeting aforesaid but civilian fliers. We pilots need a strong association to put forward our claims. All sorts of laymen are telling us where we get off while we sit by and twiddle our thumbs. It's about time we waked up and did something.

Let's hear from other pilots on this subject!

Kansas City News

By R S Knowlson

Here's one you birds who aviate can put in your book for future reference. It concerns Herbert L Kindred, air mail pilot for the National Air Transport, whose route lies from Kansas City to Dallas, Tex., or vice versa, and a kit of spare parts.

The first forced landing staged by any of the N A T pilots was by Kindred several days ago when he went down near Denton, Tex., with a leaky radiator. Kindred's idea was to sit down on some field not too close to town where he wouldn't be bothered by a lot of silly questions from the well meaning populace.

He picked a good looking field about five miles from Denton and landed. A hasty examination disclosed that all the

water had left his radiator. What to do was the question. A small stream babbled along near his plane, but it was like a straw to a drowning man, for he still had his leaking radiator. Just when he had about decided to send for help, a little girl meandered across the prairie.

The girl was chewing gum. In fact, she had a wad that seemed difficult to handle for one whose mouth was so small.

"What'll you take for it?" asked Kindred.

"Take for what?" was the girl's counter question.

"For that second hand chewing gum of your's," answered the pilot.

"A nickel," was the reply.

"Sold," declared Kindred and the exchange was made.

Kindred stopped up the leak with the gum, filled up with water, and flew on into Dallas. Upon his return to Kansas City, he walked into the N A T office at Richards field, and, throwing a handful of gum on a desk, announced:

"Boys, there's my spare parts."

Blaine M Tuxhorn, who recently brought a 6 place, cabin job onto Richards field that he had constructed himself, has convinced the usual group of skeptics that his new airplane does more than merely look good. With its full load of five passengers and pilot, and its 180 hp Hisso, the plane gets

W T Whitlock

Cleveland Airport

off in little more than nothing, climbs well and handles well in the air.

Instead of the customary tail skid, the plane is equipped with a small wheel which steers according to pressure on the rudder bar. In other words, the ship can be turned "on a dime". A brake, which works on the tail wheel in conjunction with the forward or backward movement of the stick, enables the pilot to stop his ship within an extremely small space.

Tuxhorn recently carried 125 passengers in three days from one organization in Kansas City with his new machine. Two young men in the organization, which was the Unity School of Christianity, interested that number in going for hops in the ship. The result is that the pilot now is trying to get other wholesale flights arranged for.

In order that he may have a ship to play around in, Lieut Isiah Davies, commanding officer of the army post at Richards field, has borrowed a DeHaviland from Fort Riley. Davies' ship was burned flat when army hangar No 1 went up in smoke early the morning of May 12. Davies is about the "flyingest" commander of an army post we ever saw and he simply must have his hours in the air.

Clarence W Musser, who flies almost daily merely as a pastime, has just finished a job of airplane decorating that has made his Waco look like a Christmas tree. With two shades of blue, one of red, several other colors and a bullet nose, Musser's machine would stand out among a million. It is powered with an OXX 6 motor and equipped with about everything except hot and cold running water.

Someone has suggested the purchase of a Huff-Daland sprinkling cart to settle the dust question on Richards field.

Opening of Candler Field Postponed

Owing to the necessity of additional work on Candler Field, and the postponement of the air mail contract from June 1 to Aug 1, the authorities of Atlanta, Ga, have decided to open the new municipal landing field on July 5 instead of June 1, as originally reported

Ferney, S. D.

By J W Carlsen

Flying activities by Dakota Airplane Company, Ferney, S D, have been going on despite dust storms and high winds during the Spring months Four students received training and soloed this Spring, and three more students are busy taking their training now Mr Fahlin, chief instructor, for the company is a pilot with wide experience in the flying game, both in Europe and U S and is now employing one of his own new methods of training, which cuts the actual training time in the air considerably As an example a short time ago a young farmer, J S Sagmiller, of Selfridge, N D, came down here and received complete training and soloed in only five days

The interest in aviation seems to be steadily increasing in this part of the country Two ships have been sold by the Company in the last month One to E Engelbretson, of Dunseith, N D, and one to Verner Davidson, of Claremont, S D, both students of the company Chester Wage who is a busy banker, is still flying his "Moineken Special" saving considerable time on his business trips J W Carlson is now getting a three passenger Canuck ready for a barnstorming trip toward the Black Hills

Denver, Colo.

During Colorado's Golden Jubilee, which will be celebrated in August, Denver will hold an Air Meet at Lowry Field, which promises to be one of the most important events in the celebration The On-to-Denver race of the meet offers $1,000 as a prize to the winner, conditions of the race being distance flown, elapsed time and load carried Sunday, Aug 1, will be devoted to the Army and commercial fliers for stunting, bombing, parachute jumps, night flying and anti-aircraft exhibitions Monday, Aug 2 will be reserved for commercial races including altitude, speed and load tests

Pitcairn Aviation New Field

The new flying field of Pitcairn Aviation, Inc., comprising 270 acres and said to be the largest commercial field in the East, is located on Doylestown Pike, about three miles above Willow Grove, Pa.

A North and South runway measures about 4500 ft and the East and West runway measures about 4200 ft. These are said to be the longest runways of any commercial field in America, which does not except the Ford Dearborn field. Surrounded, as it is, by miles of flat fields devoted to crops, it will serve ideally for the passenger-carrying and student-instruction business in which Pitcairn Aviation, Inc., specializes. Two hangars are completed, the larger measuring 60 ft. by 120 ft., and the conditioning of the field is finished for flying purposes A "lean-to" against the main hangar contains stock room, repair shop, operations office and a rest room for the public

Doylestown Pike, at this point, is Route No 2, Lackawanna Trail, and is one of the much-traveled roads.

Concord, N. H

Lieut R S Fogg has returned to his home airdrome at Concord, N H from Bradenton, Fla., where he carried passengers during the winter months with his Hispano MF boat. He is now operating his Lawson plane at Concord and also overhauling the MF boat preparatory to operating on Lake Winnepesaukie again during the Summer season Last summer Lieutenant Fogg was awarded the first Star Route Air Mail contract which he operated with a flying boat covering 45 miles and making ten stops daily Not a single trip was missed and the residents of that section are clamoring for a continuation of the service this year Lieutenant Fogg hopes to resume the service July 1st

U. S. Air Forces

Bombing Practice Scores

With Tortilita Island (approximately the size of a battleship) as a target, five Martin bombers from France Field, the U S Army air base in the Canal Zone, recently dropped forty bombs in bombing practice at the Pacific entrance to the Panama Canal At an altitude of 3,000 ft, and with a speed of 80 m p h, the bombers were able to observe nineteen hits, an examination of photographic records being necessary to determine the status of the balance

Lieut Westside T Larson, the bomber in the winning plane, will represent the Panama Canal Dept in the national bombing match to be held soon at Langley Field Lieut Larson's plane made 100 per cent hits in this test

Navy Radio Weather Service

A regular system for broadcasting weather reports to aircraft in flight and for the exchange of weather information between the naval air stations along the Atlantic Coast has been started by the Navy Department.

In the Washington-Norwalk-New York area, where flights are frequent, the stations at Hampton Roads, Dahlgren and Quantico, Va; Anacostia, Philadelphia and Lakehurst, will broadcast a brief outline of the weather and flying conditions in their vicinity every two hours, beginning at 7 a.m

These reports will first be sent on 550 kilocycles in order to be available for aircraft in the air in the immediate neighborhood of any station.

Fifteen minutes after the hour, the same reports are to be repeated on 3,475 kilocycles, beginning at Lakehurst, so that each station will know the weather conditions at every other station

As flights become frequent enough in other areas to justify it, similar systems will be opened up

This special aircraft radio service will also handle movement reports of aircraft, reports of forced landings, and any weather reports especially desired from stations rendering this service at other than the specified time

Non-Sinkable Coat Helps Flier

The non-sinkable coat which, with the parachute now attached to the shoulders of all aviators, constitutes the standard safety equipment in flying over or near water, assisted materially in saving the life of Lieut Harry C Wisehart when his plane recently fell in the sea at Hawaii, the War Department announced

Removing parachute and puttees, Lieutenant Wisehart swam a mile to the shore

Army Air Orders

Resignation of Maj Raycroft Walsh, A S., of commission as officer, accepted

Capt William E Farthing, A S, Langley Field, to Fort Sill

Following officers, A S Res., to active duty, Washington, from places indicated, reverting to inactive status June 20: Capt William Lawrence Purcell, Buffalo, Capt. Paul Swan Robertson, Detroit, Sec Lieut Frank Edward Ashton, Jr, Chicago

Sec Lieut Aaron J Yanger, A S, relieved from present assignment and duty Scott Field, and will report to commandant A S Bal & Air Sch for duty

Maj Archie W Barry, A S, Little Rock, to Washington, D C

Sec. Lieuts Brenner P Purdue and Harry G Spillinger, Kelly Field, to Fort Sam Houston.

Maj Harold Geiger, A S, Langley Field, to Phillips Field

Capt Walter F. Kraus, A S, Cambridge, to Washington.

Capt Falk Harmel, A S Res, Washington, to active duty Chanute Field, reverting to inactive status June 27

Sec. Lieut. John Randolph Armstrong, A S. Res., Albany, Ga, to active duty Maxwell Field, reverting to inactive status June 20

Sec Lieut. Gerald Pomeroy Yound, A S Res, Dayton, to active duty Brooks Field, reverting to inactive status June 20

Sec Lieut David Mering Borden, A S, Res, Franklin, Ohio, to active duty Washington, reverting to inactive status June 13

Sec Lieut Russell J Minty, A S, Selfridge Field, to New York City, sailing June 29, via Government transportation, to the Hawaiian Dept

Navy Air Orders

Lieut Robert E Davenport det Navy Yard, Washington, to Nav Air Sta., Lakehurst.

Lieut Robert W Fleming det. U S S Arizona to Nav A Sta, Pensacola

Ens Frederick C Hartman det Nav. A Sta., Pensacola, to U S S Ramapo

Lieut Comdr DeWitt C Ramsey det command VT Sqdn One, Aircf Sqdns, Sctg Flt, to U S S Langley

Lieut (jg) Myron F. Eddy det Aircf Sqdns, Sctg Flt, to Naval Acad

Lieut. (jg) Arnold J. Isbell det VO Sqdn One (U S S Tennessee) Aircf Sqdns, Battle Flt, to Naval Acad

Lieut. Joseph T Talbert det Nav A Sta, Pensacola, to Naval Acad.

Lieut (jg) Edward B Curtis det U S S Worden, to temp duty Nav A Sta., Pensacola

Ens Philip R Coffin det U S S Utah to temp. duty Nav A Sta, Pensacola.

Ens John C Waldron det U S S Seattle, to temp duty Nav A Sta., Pensacola

Lieut Ernest C. Johnson to duty Nav A Sta., Lakehurst, uncompleted portion of orders Jan 12 revoked

Lieut (jg) Russell H Sullivan to Nav A Sta, San Diego, desp ords Apr 28 modified

Ens Church A Chappell det Nav A Sta., Pensacola, to U S S Yarborough

Ens. Charles B Cross det Nav A Sta., Pensacola, to Asiatic Station

Ens. William V Deutermann det Nav A Sta., Pensacola, to U S S Arizona

Ens Hailsted L. Hopping det U S S Richmond, to temp duty Nav A Sta., Pensacola

Ens Frank C Layne det Nav A Sta, Pensacola, to U S S Colorado

Ens Arthur B Leverett det Nav. A Sta., Pensacola, to U S S Sapelo

Ens Solomon F Oden det Nav A Sta, Pensacola, to U S S Galveston

Ens Charles W Wilkens det Nav A Sta., Pensacola, to U S S Patoka

Lieut Julian B Noble det Nav A Sta, Pensacola, to Naval Acad.

Lieut William K Patterson det Aircf Sqdns, Sctg Flt, to Naval Acad

Lieut (jg) Daniel W Harrigan det U S S Niagara, to Temp duty Nav A Sta., Pensacola.

Ens Henry H Harrison det U S S Niagara, to temp duty Nav Torp Sta, Pensacola.

Marine Corps Air Orders

Maj C A Lutz det A S Tact Sch, Langley Field, to M B, Quantico

Capt R A Presley det N A S, N O B, San Diego, to 1st Brigade, Haiti

The following have been appointed Sec. Lieuts. in the Marine Corps, and assigned to duty, under instruction, in aviation, at the Naval Academy, Annapolis:

E W Snedeker	N N. Nelson	E J Ashton
L B Henderson	H J Withers	M S Crawford
C B Graham	A H Butler	K W Benner
C G Wadbrook	R S Burr	E S Davis
B F Kaiser, Jr.	C D Silard	R M. Gnlick
J L Wolfe	W E Dickey	T A Wornham
J S E Young, Jr	T B Jordan	E N Salzman

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